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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,077	08/10/2001	Kristain John Sime	13183	7 7361

7590

09/09/2003

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,077

Applicant(s)

SIME ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-25 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 and 27-29 is/are allowed.
- 6) ☒ Claim(s) 1,3-24,30 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. All outstanding rejections are overcome by applicants' amendment filed 6/24/03.

Given that the new grounds of rejection as set forth below are necessitated by applicants' amendment, the following action is final.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 3-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 1 recites "shorts chain hydrocarbon" plasticizer. The scope of the claim is confusing because it is not clear what is meant by "short chain". What types of hydrocarbons are considered "short chain"? The phrase "short chain" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

(b) Claims 6 and 7, which each ultimately depend on claim 1, disclose that the block chain plasticizer is polyvinyl acetal or polyvinyl butyral while claim 1 discloses that the block chain plasticizer is a short chain hydrocarbon. Thus, the scope of the claims is confusing because it is not clear how the block copolymer is both a short chain hydrocarbon and a polyvinyl acetal or polyvinyl butyral. Clarification is requested.

(c) Claim 6, which depends on claim 1, recites the limitation "the block copolymer plasticizer" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim given that there is no disclosure of block copolymer plasticizer in claim 1.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (U.S. 6,532,870) in view of Wong et al. (U.S. 6,319,310) and Baker et al. (U.S. 6,093,239).

Kato et al. disclose a method of printing onto substrate comprising heating to liquid solid hot melt ink to a temperature of 90-130 °C, ejecting the liquid from printer, and allowing liquid to solidify. The hot melt ink comprises 0.1-10% dye, 30-90% stearic acid and 5-70% resin including butyral resin (col.1, lines 62-67, col.2, lines 15-20, col.9, lines 4-7, 10-18, 37, and 53-55, col.10, lines 5, 10-15, and 36-39, col.13, lines 28-32, and col.15, lines 55-59).

The difference between Kato et al. and the present claimed invention is the requirement in the claims of (a) additional plasticizer and (b) tri-block copolymer.

With respect to difference (a), Wong et al., which is drawn to hot melt ink, disclose the use of 0.1-20% aromatic hydrocarbon plasticizer wherein the motivation for using such plasticizer is that the plasticizer enables the ink to maintain low viscosity without impairing the phase change behavior of the ink (col.17, lines 18-25 and 38-41).

With respect to difference (b), Baker et al., which is drawn to hot melt ink, disclose the use of tri-block copolymer, i.e. styrene-butadiene-styrene, in order to provide ink with suitable viscosity (col.3, lines 36-38 and 54-55).

In light of the motivation for using plasticizer disclosed by Wong et al. and tri-block copolymer disclosed by Baker et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such plasticizer and tri-block copolymer in the ink of Kato et al. in order to produce ink with suitable viscosity, and thereby arrive at the claimed invention.

Allowable Subject Matter

6. Claims 25 and 27-29 are allowable over the "closest" prior art for the following reasons:

Kato et al. (U.S. 6,532,870) disclose hot melt ink comprising dye, stearic acid, and butyral resin. However, there is no disclosure of aromatic hydrocarbon resin first plasticizer, tri-block copolymer, or fluorinated polyolefin copolymer as presently claimed.

Baker et al. (U.S. 6,093,239) disclose hot melt ink comprising stearic acid or tri-block copolymer. However, there is no disclosure of ink comprising stearic acid and tri-block copolymer as well as no disclosure of polyvinyl butyral, aromatic hydrocarbon resin first plasticizer, or fluorinated polyolefin copolymer as presently claimed.

Wong et al. (U.S. 6,319,310) disclose hot melt ink comprising aromatic hydrocarbon plasticizer and colorant. However, there is no disclosure of polyvinyl butyral, tri-block copolymer, or fluorinated polyolefin copolymer as presently claimed.

EP 105994 disclose hot melt ink comprising plasticizer, block copolymer, pigment, and fatty acid. However, there is no disclosure of polyvinyl butyral, tri-block copolymer, or fluorinated polyolefin copolymer as presently claimed.

Scheibelhoffer et al. (U.S. 5,549,929) disclose ink comprising flow additive. However, there is no disclosure that the flow additive is fluorinated polyolefin as presently claimed and further, there is no disclosure of hot melt ink.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

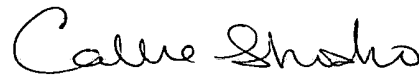
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
9/6/03